WHAT IS CLAIMED IS:

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1. A data processing apparatus which can perform data communication with various devices connected on a predetermined communication medium, comprising:

acquirement means for acquiring a resource information structure and a status of each device by communicating with the various devices;

management means for storing and managing the resource information structure and the status acquired by said acquirement means; and

virtual system configuration display means for causing a display unit to display a system configuration based on the resource information structure and the status stored and managed by said management means, such that icons capable of being discriminated for respective functions are displayed to be connected on a virtual network path.

2. An apparatus according to Claim 1, wherein the icon for each function is a specific icon which is allocated to a maker of each device and of which displaying form is different from others.

3. An apparatus according to Claim 1, further comprising:

first indication means for indicating an arbitrary combination of the icons for the respective functions

displayed on the display unit; and

first judgment means for judging effectiveness of an arbitrary combination function indicated by said first indication means,

wherein, when it is judged by said first judgment means that the combination function is effective, said virtual system configuration display means temporarily changes a display status of the icon for each function indicated by said first indication means from display statuses of other icons while the combination function is being executed.

4. An apparatus according to Claim 1, further comprising:

first indication means for indicating an arbitrary combination of the icons for the respective functions displayed on the display unit,

wherein said virtual system configuration display means displays a path to connect shortest the icons for the respective functions indicated by said first indication means on the virtual network path in a displaying form different from a displaying form of other paths.

5. An apparatus according to Claim 4, wherein, when said virtual system configuration display means displays the path to connect shortest the icons for the

respective functions indicated by said first indication means on the virtual network path in the displaying form different from that of other paths, said virtual system configuration display means adds a specific emphasis pattern to the indicated icons to emphasize and display these icons.

6. An apparatus according to Claim 1, wherein the various devices include at least any of a printer, a fax machine, a digital copying machine, a scanner, a digital camera and a modem.

7. An apparatus according to Claim 1, wherein said data processing apparatus can communicate with other data processing apparatus functioning as a management server.

8. An apparatus according to Claim 7, wherein said other data processing apparatus updatably stores resources for displaying the resource information structure acquired from the various device and the status of each device.

9. An apparatus according to Claim 1, wherein said acquirement means acquires the resource information structure from a device driver of each device.

10. An apparatus according to Claim 1, wherein the resource information structure is described based on a predetermined data structure.

11. An apparatus according to Claim 8, wherein the resources include various icon image data for displaying the system configuration.

12. An apparatus according to Claim 1, further comprising judgment means for judging whether or not each device is shared on a network and a driver has been installed in said data processing apparatus,

wherein a displaying form of the icon corresponding to the device of which driver is not installed in said data processing apparatus is made different from a displaying form of the icon of other device in accordance with the judged result of said judgment means.

13. An apparatus according to Claim 12, wherein the icon corresponding to the device of which driver is not installed in said data processing apparatus is displayed in gray.

14. A data processing method in a data processing apparatus which can perform data communication with various devices connected on a predetermined

communication medium, said method comprising:

an acquirement step of acquiring a resource information structure and a status of each device by communicating with the various devices;

a management step of storing and managing the resource information structure and the status acquired in said acquirement step; and

a virtual system configuration display step of causing a display unit to display a system configuration based on the resource information structure and the status stored and managed in said management step, such that icons capable of being discriminated for respective functions are displayed to be connected on a virtual network path.

15. A method according to Claim 14, wherein the icon for each function is a specific icon which is allocated to a maker of each device and of which displaying form is different from others.

16. A method according to Claim 14, further comprising:

a first indication step of indicating an arbitrary combination of the icons for the respective functions displayed on the display unit; and

a first judgment step of judging effectiveness of an arbitrary combination function indicated in said

first indication step,

wherein, when it is judged in said first judgment step that the combination function is effective, said virtual system configuration display step temporarily changes a display status of the icon for each function indicated in said first indication step from display statuses of other icons while the combination function is being executed.

17. A method according to Claim 14, further comprising:

a first indication step of indicating an arbitrary combination of the icons for the respective functions displayed on the display unit,

wherein said virtual system configuration display step displays a path to connect shortest the icons for the respective functions indicated in said first indication step on the virtual network path in a displaying form different from a displaying form of other paths.

18. A method according to Claim 17, wherein, when said virtual system configuration display step displays the path to connect shortest the icons for the respective functions indicated in said first indication step on the virtual network path in the displaying form different from that of other paths, said virtual system

configuration display step adds a specific emphasis pattern to the indicated icons to emphasize and display these icons.

19. A method according to Claim 14, further comprising a judgment step of judging whether or not each device is shared on a network and a driver has been installed in said data processing apparatus,

wherein a displaying form of the icon corresponding to the device of which driver is not installed in said data processing apparatus is made different from a displaying form of the icon of other device in accordance with the judged result in said judgment step.

20. A method according to Claim 19, wherein the icon corresponding to the device of which driver is not installed in said data processing apparatus is displayed in gray.

21. A storage medium which stores a computer-readable program to control a data processing apparatus capable of performing data communication with various devices connected on a predetermined communication medium, said program comprising:

an acquirement step of acquiring a resource information structure and a status of each device by

communicating with the various devices;

a management step of storing and managing the resource information structure and the status acquired in said acquirement step; and

a virtual system configuration display step of causing a display unit to display a system configuration based on the resource information structure and the status stored and managed in said management step, such that icons capable of being discriminated for respective functions are displayed to be connected on a virtual network path.

22. A storage medium according to Claim 21, wherein the icon for each function is a specific icon which is allocated to a maker of each device and of which displaying form is different from others.

23. A storage medium according to Claim 21, wherein said program further comprises:

a first indication step of indicating an arbitrary combination of the icons for the respective functions displayed on the display unit; and

a first judgment step of judging effectiveness of an arbitrary combination function indicated in said first indication step,

wherein, when it is judged in said first judgment step that the combination function is effective, said

virtual system configuration display step temporarily changes a display status of the icon for each function indicated in said first indication step from display statuses of other icons while the combination function is being executed.

24. A storage medium according to Claim 21, wherein said program further comprises:

a first indication step of indicating an arbitrary combination of the icons for the respective functions displayed on the display unit,

wherein said virtual system configuration display step displays a path to connect shortest the icons for the respective functions indicated in said first indication step on the virtual network path in a displaying form different from a displaying form of other paths.

25. A storage medium according to Claim 24, wherein, when said virtual system configuration display step displays the path to connect shortest the icons for the respective functions indicated in said first indication step on the virtual network path in the displaying form different from that of other paths, said virtual system configuration display step adds a specific emphasis pattern to the indicated icons to emphasize and display these icons.

26. A storage medium according to Claim 21, wherein said program further comprises a judgment step of judging whether or not each device is shared on a network and a driver has been installed in said data processing apparatus, and

wherein a displaying form of the icon corresponding to the device of which driver is not installed in said data processing apparatus is made different from a displaying form of the icon of other device in accordance with the judged result in said judgment step.

27. A storage medium according to Claim 26, wherein the icon corresponding to the device of which driver is not installed in said data processing apparatus is displayed in gray.

28. A data processing apparatus which can perform data communication with plural devices connectable with a data communication path, comprising:

display control means for displaying icons visually representing appearances of the devices connected on the data communication path, on a display unit,

wherein said display control means displays, on the display unit, an image representing the data communication path together with the plural icons

respectively corresponding to the plural devices, and

said display control means disposes and displays the icons nearby the image representing the data communication path according to a connection status of the data communication path and the devices.

29. An apparatus according to Claim 28, wherein each of the plural devices has at least an independent function, and said display control means makes a displaying form of the icon different for each function.

30. An apparatus according to Claim 29, wherein, even if the plural icons respectively represent the devices having an identical function, said display control means makes the displaying forms of these icons different from others according to makers different.

31. An apparatus according to Claim 29, wherein the plural devices include a scanner, a printer and a digital copying machine, and

said display control unit displays the icon visually representing the appearance of the scanner, the icon visually representing the appearance of the printer, and the icon visually representing the appearance of the digital copying machine on the display unit according as these devices are connected on the data communication path.

32. An apparatus according to Claim 31, wherein the plural devices include a fax machine, a digital camera and a modem, and

said display control unit displays the icon visually representing the appearance of the fax machine, the icon visually representing the appearance of the digital camera, and the icon visually representing the appearance of the modem on the display unit according as these devices are connected on the data communication path.

33. An apparatus according to Claim 31, further comprising first indication means for indicating an arbitrary combination of the icons from among the plural icons displayed on the display unit,

wherein, according as the combination of the icons corresponding to the scanner and the printer is indicated by said first indication means, the scanner and the printer are cooperated with each other through the data communication path so as to execute a function equivalent to the function executable by the digital copying machine.

34. An apparatus according to Claim 29, further comprising:

first indication means for indicating an arbitrary combination of the icons from among the plural icons

displayed on the display unit;

judgment means for judging whether or not the combination indicated by said first indication means is appropriate; and

control means for cooperating, according to the judged result of said judgment means, each of the devices represented by the icons of the arbitrary combination indicated by said first indication means with others through the data communication path so as to execute an arbitrary combination function executable by the devices represented by the icons of the arbitrary combination.

35. An apparatus according to Claim 34, wherein said display control means temporarily makes the displaying form of the icons of the arbitrary combination indicated by said first indication means different from the displaying form of the icons representing other devices, according as the combination function is executed by using the arbitrary combination function.

36. An apparatus according to Claim 35, wherein said display control means displays a specific emphasis pattern nearby the icon of the arbitrary combination indicated by said first indication means.

37. An apparatus according to Claim 34, wherein, according as the combination function is executed by using the devices represented by the icons of the arbitrary combination, said display control means makes the displaying form of an image corresponding to a path connecting these devices with others on the image representing the data communication path different from the displaying form of an image corresponding to other path.

38. An apparatus according to Claim 34, wherein, according as the combination function is executed by using the devices represented by the icons of the arbitrary combination, said display control means temporarily makes the displaying form of the icon corresponding to the arbitrary device indicated by said first indication means different from the displaying form of the icon corresponding to other device, and makes the displaying form of an image corresponding to a path connecting these devices with others on the image representing the data communication path different from the displaying form of an image corresponding to other path.

39. An apparatus according to Claim 28, wherein, according as the device of which driver is not installed in said data processing apparatus is

connected on the data communication path, said display control means makes a displaying form of the icon corresponding to the device of which driver is not installed different from a displaying form of the icon of other device.

40. An apparatus according to Claim 39, wherein said display control means displays in gray the icon corresponding to the device of which driver is not installed.

41. An apparatus according to Claim 28, further comprising:

acquirement means for acquiring data concerning an operation condition output by the device through the data communication path,

wherein said display control means displays the data concerning the operation condition nearby the icon corresponding to the device of a data output source acquired by said acquirement means.

42. An apparatus according to Claim 28, wherein, according as the device capable of inputting or outputting a color image is connected on the data communication path, said display control means displays a mark indicating such a fact nearby the icon corresponding to the device capable of inputting or

outputting the color image.

43. An apparatus according to Claim 28, wherein, according as the device of which driver has been installed in said data processing apparatus but which can not be used is connected on the data communication path, said display control means displays a mark indicating such a fact nearby the icon corresponding to the unusable device.

44. A data processing method for a data processing apparatus which can perform data communication with plural devices connectable with a data communication path, said method comprising:

a display control step of displaying icons visually representing appearances of the devices connected on the data communication path, on a display unit,

wherein said display control step displays, on the display unit, an image representing the data communication path together with the plural icons respectively corresponding to the plural devices, and

said display control step disposes and displays the icons nearby the image representing the data communication path according to a connection status of the data communication path and the devices.

45. A storage medium which stores a program to

cause a data processing apparatus which can perform data communication with plural devices connectable with a data communication path, to execute following step:

a display control step of displaying icons visually representing appearances of the devices connected on the data communication path, on a display unit,

wherein said display control step displays, on the display unit, an image representing the data communication path together with the plural icons respectively corresponding to the plural devices, and

said display control step disposes and displays the icons nearby the image representing the data communication path according to a connection status of the data communication path and the devices.

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